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Lisbon Strategy and Policies for the Information Society
Lisbon Strategy and i2010

Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Belgium

6 / 2006

Key findings

(Almost) all Belgian schools are equipped with computers and internet connection. 74% use the internet via a broadband connection. With this figure Belgium ranks at number 15 of the 27 countries participating in the survey. There is a large variation between school types: while 63% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 88%.

63% of Belgian classroom teachers use computers in class, with some variation across school types and between urban (71%) and rural areas (51%). Surprisingly little variation can be found in this respect according to the subjects of teaching.

43% of the teachers using computers use them in less than 10% of all lessons. Almost 20% state that they use computers in more than half of their lessons. Teachers in vocational schools use computers in class much more frequently than their colleagues in general education in Belgium and well above the EU25 average.

Almost a third of teachers in Belgium do not use computers in class 37% state a lack of computers in their schools as an important barrier. Unlike many other countries "lack of teacher ICT skills" and "no or unclear benefits in using ICT" are not seen as key barriers by Belgian teachers.

The still sub-optimal quality of the internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Belgium and equally in Europe.

With 35% of Belgian teachers disposing of sufficient access to the internet at school, the necessary competence in using ICT in class and motivation to its use, Belgium ranks at 11th which places the country just in the top half of European countries.

Belgium schools had already reached an almost 100% level of equipment with computers in schools some 5 years ago but the number of computers per 100 pupils has remained at the same level – 10 per 100 pupils which is below the EU25 average.

Surprisingly, the older teachers are slightly more intensive ICT users compared to all younger age groups.

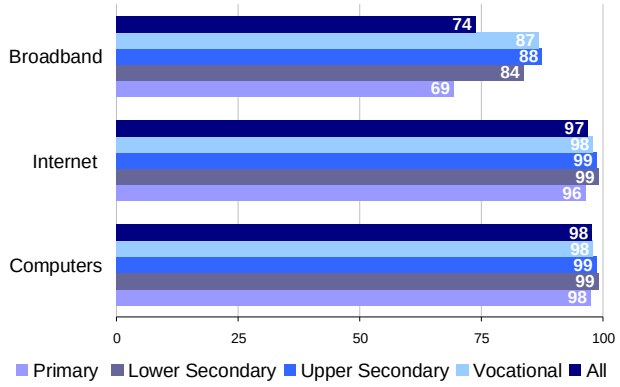
An area of concern seems to be the lack of technical maintenance and support which has been articulated by 74% of the Belgian schools (EU25 average: 65%).

ICT Equipment and Internet in Schools

Almost all Belgian schools now use computers for teaching and have internet access. 74% use the internet via a broadband connection. With this figure Belgium ranks at number 15 of the 27 countries participating in the survey. There is a large variation between school types: while only 63% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 88%. There is also some variation with regard to broadband access between urban and rural areas: 80% of schools in densely populated areas have broadband access compared to 67% of schools in intermediate and thinly populated areas.

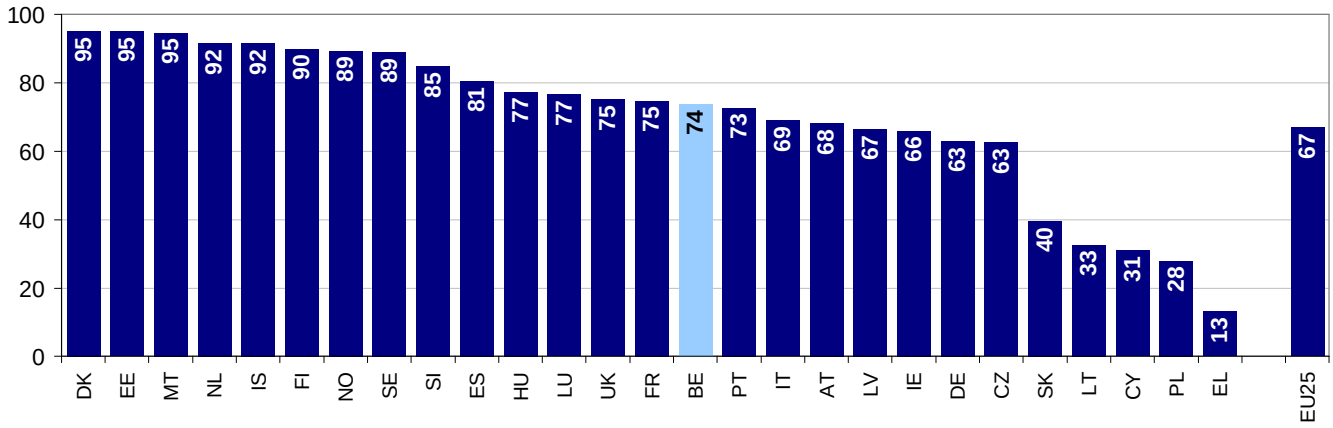
70% of schools have a website, 58% offer e-mail to teachers, and 20% do so to pupils. 79% of the Belgian schools using computers for teaching use them in classrooms, with the highest percentage being achieved in primary schools (84%). Computers in the school library are more or less restricted to upper secondary schools.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in Belgium 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.*

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

Those schools with a broadband connection to the internet are the more intensive ICT users in terms of availability of a school website, the use of a LAN or the availability of an intranet.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also and very widely as a separate subject.

Computer sciences are taught as a separate subject in both, lower (52%) and upper secondary schools (58%) and in 62% of vocational schools, according to the statements made by Belgian head teachers.

69% of Belgian classroom teachers had used computers in class in the 12 months prior to the survey, with some variation across school types (lower usage level in primary schools) and between urban and rural areas with usage levels of 50% in thinly populated and 70% in all other more urban region types. For most teachers, this includes not only using a computer for presentation purposes but mainly the use of computers by pupils in class. Surprisingly little variation can be found in this respect according to the subjects of teaching[1].

43% of the teachers using computers use them in less than 10% of all lessons. Almost 20% state that they use computers in more than half of their lessons which comes close to the EU25 average figure. Teachers in vocational schools use computers in class much more frequently than their colleagues in general education with almost 40% using computers in more than a quarter of their lessons.

Belgian teachers using computers do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes which in most categories is above the European average. They are also very active (80%) in searching for material themselves in the internet. This shows a very proactive behaviour.

ICT equipment in Belgian schools 2006

			Educational Level (BE)				Type of locality (BE)		Internet Access (BE)	
	Total BE	Total EU25	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Intermediate and thinly populated[2]	Narrowband	Broadband
Computers per 100 pupils [a]	9.7	11.3	7.7	13.3	11.9	13.6	9.3	10.5	7.4	10.6
... of which internet connected	7.7	9.9	5.2	12.0	10.6	12.0	7.6	8.0	5.5	8.6
Percentage of schools having...										
Computers for teaching [b]	97.7	98.7	97.5	99.1	98.6	98.0	97.5	98.0	100.0	100.0
Internet access [c]	96.9	96.2	96.4	99.1	98.6	98.0	97.5	96.2	100.0	100.0
Broadband internet access [d]	73.8	66.9	69.3	83.7	87.5	86.8	79.6	67.2	0.0	100.0
A website [e]	69.2	63.0	61.0	92.0	93.1	94.4	76.0	61.4	65.1	73.3
An e-mail address for the majority of teachers [f]	57.8	65.2	57.5	61.1	54.2	54.6	57.5	58.2	60.7	59.3
An e-mail address for the majority of pupils [g]	19.6	23.5	15.7	33.2	28.1	27.9	18.4	20.9	15.5	21.7
A LAN [h]	57.5	55.2	50.1	81.2	79.2	83.0	61.5	52.9	48.0	62.8
An intranet [i]	28.1	40.8	20.5	50.6	51.5	54.0	31.2	24.6	20.1	31.8
An external support or maintenance contract [j]	28.9	47.1	24.6	39.0	42.7	38.0	30.7	26.8	20.5	32.7
Percentage of schools using computers for education in…										
Computer labs [k]	74.7	80.5	65.7	96.7	98.6	98.0	78.4	70.5	64.8	78.7
Classrooms [l]	78.8	61.4	83.5	70.9	64.8	69.9	75.9	82.1	79.0	78.5
School library [m]	22.5	33.4	16.3	40.9	46.0	42.7	22.4	22.7	14.9	25.2
Other locations accessible for pupils [n]	21.1	27.0	16.2	33.2	38.3	37.7	20.7	21.6	16.7	22.8

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.*

Use of computers in class in Belgium 2006

Assessments of the head teacher		Total BE	Total EU25	Educational Level (BE)				Type of locality (BE)		Internet Access (BE)	
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Intermediate and thinly populated	Narrowband	Broadband
Computer sciences taught as separate subject	Agree	40.8	54.7	35.2	52.0	58.4	62.2	42.3	39.0	39.5	40.9
	Disagree	57.7	43.7	63.6	45.6	37.7	34.3	56.3	59.3	59.0	57.6
	Don't know	1.5	1.6	1.1	2.4	3.9	3.5	1.4	1.6	1.5	1.5
Computers and the internet are											
integrated into teaching of most subjects	Agree	63.3	75.3	59.0	75.2	73.6	74.2	62.0	64.8	60.1	64.3
	Disagree	35.5	24.1	40.1	23.9	25.0	25.1	37.0	33.8	37.1	35.0
	Don't know	1.1	0.6	0.9	0.9	1.3	0.7	0.9	1.4	2.8	0.6
used for teaching traditional subjects or basic skills	Agree	65.8	75.8	64.0	74.5	69.1	68.2	66.3	65.2	60.8	67.0
	Disagree	32.8	22.8	35.0	25.5	27.7	30.2	32.7	32.9	36.4	32.1
	Don't know	1.4	1.4	0.9	0.0	3.2	1.6	0.9	1.9	2.8	1.0
used for teaching foreign languages	Agree	39.5	56.6	30.4	67.1	65.6	63.6	39.1	39.9	36.6	40.1
	Disagree	57.2	40.1	65.9	31.3	31.7	33.7	57.2	57.3	57.7	57.3
	Don't know	3.3	3.3	3.7	1.6	2.7	2.7	3.6	2.9	5.7	2.6
used for coping with students with special needs/ handicaps	Agree	67.5	71.7	68.9	67.6	66.2	64.8	68.7	66.1	67.5	67.1
	Disagree	31.1	23.7	30.3	31.5	30.4	33.5	29.9	32.5	31.0	31.5
	Don't know	1.4	4.6	0.9	0.8	3.4	1.7	1.4	1.4	1.5	1.4

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"*

The learning material used most by Belgian teachers includes offline learning materials such as CD-ROMs and material that has been collected on the internet by the teacher. This applies to around 80% of teachers for both types of material used. About 74% of teachers each use prefabricated pedagogical material from existing online sources and material that is made available on the schools' network and databases.

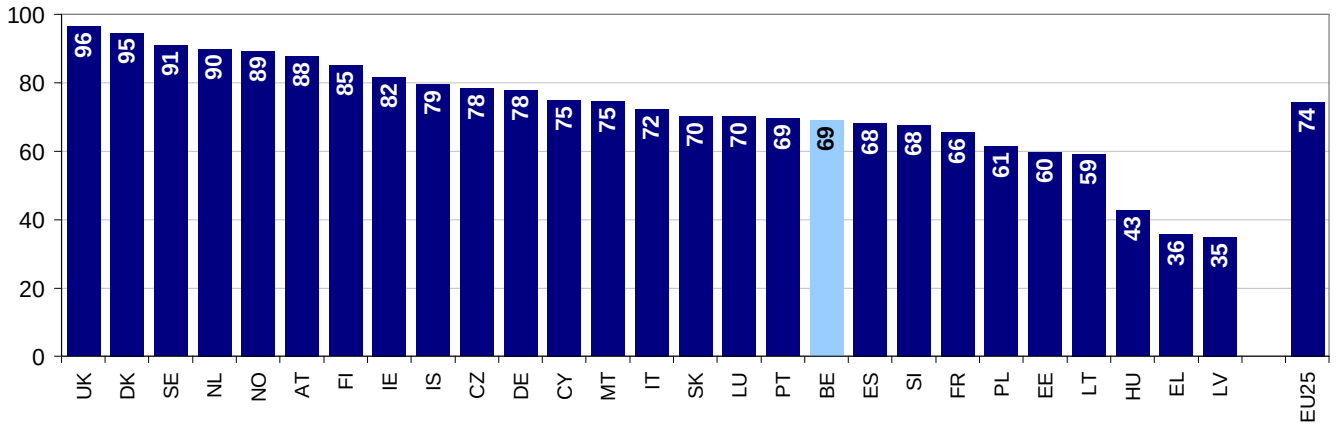
Not surprisingly, the older the teachers (indicator used here: years of teaching experience), the less use they make use of computers and the internet in schools.

Also, the higher the school level, the more use of computers – especially in terms of intensity – is made by teachers and pupils. Around half of the teachers using computers in class in upper secondary and vocational schools use these in more than 25% of their lessons, whereas the figure reaches 30% in primary schools. There are hardly any differences according to age of the teachers. The overall pattern is rather similar across all groups. Interestingly the oldest Belgian teachers are the slightly more intensive ICT users.

31% of teachers in Belgium still do not use computers in class. Asked for the most important barrier, the highest rating among this group of teachers is 49% stating a lack of computers in their schools as an important barrier. “Lack of content” (37%) and “the subject does not lend itself to being taught using ICT” follow next. Unlike many other countries neither the lack of belief in the benefits of using computers in class nor the lack of necessary skills to utilize computers in their teaching are seen as key barriers.

This results in a situation where the statement “lack of equipment in school” is expressed by a substantial 15% of all Belgian teachers (31% non-users multiplied with 49% of teachers agreeing to this item).

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in Belgium 2006

Percentage of teachers who ...	Total BE	Total EU25	Educational Level (BE)				Type of locality (BE)			Years of teaching experience (BE)			
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[3]	69.0	74.3	66.9	73.7	74.8	78.3	70.7	70.2	50.6	74.9	73.2	62.1	69.4
...use a computer in class to present or demonstrate	47.5	63.4	46.9	50.0	51.2	53.3	46.2	49.7	46.0	49.2	52.5	45.5	45.3
...have pupils use a computer in class	64.6	66.3	62.4	69.7	70.5	74.5	67.2	64.9	45.0	68.7	69.3	55.7	67.0

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?"*

Comparison of the situation in 2001 and 2006[4]

In Belgium the percentage of schools using computers for educational purposes had already reached the 99% level in 2001.

In 2001 one hundred pupils shared 10 computers. It seems that the figure stagnated over the past five years and remained at the same level in 2006.

Schools have moved over to broadband. 54% (EU25: 45%) of the schools in Belgium are connected to the internet via a DSL connection in 2006. The figure for 2001 was just 4% (EU15: 5%). The figures have increased significantly over the past 5 years.

Schools have also strongly increased the quality of ICT infrastructure: while in 2001 44% (EU15: 44%) of schools in Belgium had their own website, the figure is now 69% (EU25: 62%). The use of a LAN – which was used by 50% (EU15: 47%) of the Belgian schools – is also now up to 58% (EU25: 54%).

Frequency of computers use in class in Belgium 2006

Percentage of all teachers *using computers in class* who ...	Total BE	Total EU25	Educational Level (BE)				Type of locality (BE)			Years of teaching experience (BE)			
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	<5 y	5-9 y	10-19 y	20+ y
...use computers in 5% and less of all lessons	19.1	18.5	19.3	17.9	19.2	14.6	19.4	16.5	*34.8**	24.8	22.0	18.7	14.7
in 6 to 10% of lessons	23.7	22.5	25.6	19.1	16.3	19.6	22.2	24.8	*29.4**	21.2	22.8	27.0	23.1
in 11 to 24% of lessons	22.5	22.2	23.9	16.7	16.5	16.5	21.6	25.7	*6.8**	19.3	24.1	25.8	20.6
in 25 to 50% of lessons	15.4	20.2	14.9	14.5	15.0	13.4	14.6	16.1	*18.6**	8.2	12.9	14.9	21.0
more than 50% of lessons	19.3	16.5	16.3	31.8	32.9	35.9	22.1	16.8	*10.3**	26.5	18.3	13.5	20.7

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"*

Source of educational material used in class in Belgium 2006

Percentage of all teachers *using computers in class*[5] who ...	**Total BE**	**Total EU25**	**Educational Level (BE)**				**Type of locality (BE)**		
			Primary	**Lower secondary**	**Upper secondary**	**Vocational**	**Densely populated**	**Inter-mediate**	**Thinly populated**
...use material they have searched the internet for	80.1	82.7	79.4	86.1	84.4	81.3	82.8	78.4	*65.3**
...use existing online material from established educational sources	74.0	74.2	74.9	71.6	72.7	71.8	73.6	77.7	*51.0**
...use material that is available on the school's computer network or database	52.2	63.1	52.9	51.0	51.3	51.0	54.6	50.1	*43.7**
...use electronic offline material (such as CD ROMS)	81.3	83.0	84.7	70.6	72.2	76.9	79.9	83.6	*78.8**
...use other learning material when using computers in class	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	*0.0**

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet?"*

Barriers to computer use in class in Belgium 2006

Percentage of all teachers ***not*** *using computers in class*	Total BE	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Lack of computers	48.8	48.8	51.0	46.7	46.0	48.2	50.2	44.5	*56.0**
Lack of adequate content/material	37.3	20.3	38.2	38.2	38.7	38.2	32.6	41.3	*44.7**
Lack of content in national language	4.4	8.6	4.5	2.3	4.3	3.8	3.1	5.7	*5.7**
Lack of adequate skills of teachers	26.5	22.5	26.5	25.5	30.4	31.1	27.2	27.6	*20.1**
No or unclear benefits	18.6	16.2	18.7	17.8	19.5	15.4	12.5	27.2	*17.0**
Lack of interest of teachers	7.7	8.9	6.9	8.3	11.9	13.7	11.3	3.1	*6.8**
Subject does not lend itself to being taught via computers	27.3	24.4	23.2	35.2	46.8	54.3	27.6	28.6	*22.0**
Other	20.1	21.3	19.5	17.1	21.0	15.2	20.8	18.8	*20.8**

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"*

Attitudes on the Usefulness of ICT use in Teaching

Computers and the internet have arrived in Belgium schools and their use is steadily improving. The share of teachers in Belgium who believe that computers and the internet should not at all be used in schools is at 3%. This is four times higher than the European average.

Belgian teachers have positive attitudes about the different applications of ICT use in teaching and achieve high figures (above the European average) on attitudes that ICT should be used for letting pupils do exercises and practise (83%), letting pupils retrieve information in a self-directed manner (85%) and for collaborative and productive work by pupils (75%). There are only minor differences across school types. A majority of Belgian teachers (53%) still believes that teaching about office tools should be an integral part of the teaching process. This attitude is most prominent among teachers in vocational schools (68%) and least prominent in primary schools (50%). It is interesting that there is no common pattern across the European countries. In some countries (e.g. the UK, Norway, Iceland, Cyprus but also Spain) teachers in primary schools express this opinion much more strongly and to a larger extent compared to higher-level schools.

With all the above figures, the country ranks around the EU25 average figure or has a slightly poorer performance.

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

A majority of Belgian teachers are more or less satisfied with the technical access means at their schools: 73% state that their school is well equipped with computers and 72% express the opinion that their internet connection is fast enough. However, 53% wish there were better support and maintenance actions taken. In terms of content a considerable minority states problems with respect to finding adequate learning materials (35%) and argue that existing material are of poor quality (33%).

Competence in using ICT

Belgian teachers feel most competent in using e-mail and using a text processor programme but are less confident with downloading and installing software and with using presentation software packages.

According to the teachers, ICT skills are insufficient in around one third of Belgian schools with hardly any variation according to school type. With this figure, Belgium is better than the European average of 42%.

Attitudes on the Usefulness of ICT use in Teaching in Belgium 2006

Percentage of teachers saying computers/internet should be used for …	Total BE	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	82.5	79.9	81.9	82.5	85.1	88.3	84.1	85.9	53.0
Letting pupils retrieve information in a self-directed manner	84.8	85.0	83.8	89.8	88.8	91.6	86.1	83.7	80.8
Teaching about office tools	52.7	61.3	50.0	63.3	66.2	68.3	54.4	51.6	46.3
Collaborative and productive work by pupils	74.8	80.5	74.0	80.6	79.3	77.6	78.6	74.0	51.8
Computer/internet should not be used for any of these in teaching	2.7	0.6	2.9	1.3	2.3	1.5	2.6	2.3	5.6

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"*

Teachers' access, competence and motivation for using ICT in class 2006

Percent of teachers agreeing or strongly agreeing:	Total BE	Total EU25	Educational Level				Subject of teaching					
			Primary	Lower secondary	Upper secondary	Vocational	General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistic, crafts education	Vocational education
Access												
Our school is well equipped with computers [a]	73.4	74.2	71.8	69.9	76.6	77.3	81.3	70.2	70.6	72.4	71.6	75.5
The internet connection we have is sufficiently fast [b]	71.6	77.2	67.7	70.6	79.9	79.7	69.7	68.1	75.5	69.7	70.9	79.6
Better technical maintenance and support is required in our school [c]	52.5	64.8	53.5	54.5	51.0	51.4	49.2	53.9	55.1	49.5	58.6	57.0
Existing teaching materials on the Internet are of poor quality [d]	33.3	29.9	28.6	29.4	43.3	45.5	27.3	27.9	43.0	35.2	25.5	39.0
It is hard to find adequate learning materials for teaching [e]	35.4	38.7	31.8	34.2	43.0	44.9	28.2	31.9	28.9	35.8	33.5	50.0
Motivation												
Pupils are more motivated and attentive when computers and the internet are used in class [f]	80.1	86.3	85.3	81.6	68.4	69.2	90.9	82.0	80.9	80.9	81.9	66.3
Using computers in class does not have significant learning benefits for pupils [g]	13.4	20.7	12.2	14.1	15.5	15.6	11.6	11.9	12.7	12.0	16.7	16.0
Competence												
Teachers in our school do not have sufficient computer skills [h]	32.0	42.0	31.2	33.6	32.9	34.4	24.6	35.6	31.6	34.3	28.9	32.3
Competence / computer skills (Percentage of teachers who feel very confident at…)												
Using text processors [i]	62.1	65.0	58.2	60.6	71.5	74.4	50.7	58.5	58.4	66.1	55.9	69.8
Creating electronic presentations [j]	28.2	34.0	22.2	27.7	43.4	44.3	12.1	14.4	24.8	36.9	26.0	36.5
Using e-mail [k]	73.1	65.9	70.1	74.3	80.5	79.5	64.3	70.0	73.6	76.4	71.7	73.0
Downloading and installing software [l]	26.2	35.8	21.1	24.3	38.5	38.1	16.4	15.9	20.8	33.6	20.5	28.6

Source: *LearnInd CTS 2006;* ***Base:*** *a-h All teachers; i -l Teachers using computers in class* ***Question:*** *a-h Q14, i-l Q11.*

Motivation for ICT use in Schools

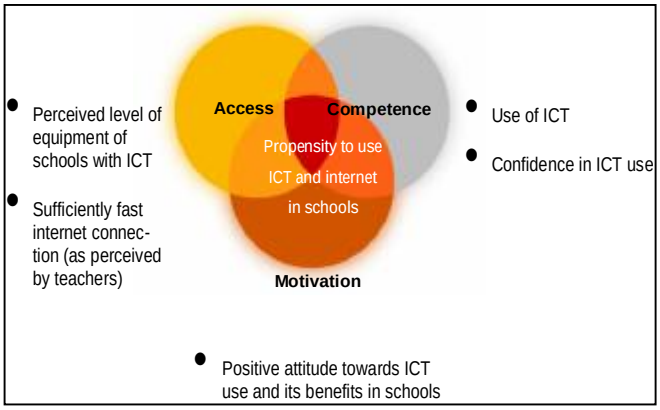
80% of Belgian teachers see significant learning benefits for pupils using computers in class and as many say that pupils are more motivated and attentive when computers and the internet are used in class.

ICT Readiness of Teachers – the ACM Model

The ACM model as developed by Viherä and Nurmela (2001)[6] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc

The Access-Competence-Motivation Model



These are: access (to computers and the internet at school), competence (in using the computer software and the internet, and applying it for teaching purposes), and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions.

In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers' satisfaction therewith rather than an objective measure of equipment status.

Access, Motivation and Competence of Teachers for Using ICT in Schools in Belgium 2006

BE	EU25	Access	Competence	Motivation
5.9	4.3	~~Access~~	~~Competence~~	~~Motivation~~
2.7	3.9	**Access**	~~Competence~~	~~Motivation~~
12.5	9.7	~~Access~~	**Competence**	~~Motivation~~
4.4	5.0	~~Access~~	~~Competence~~	**Motivation**
12.5	13.7	**Access**	**Competence**	~~Motivation~~
2.4	4.8	**Access**	~~Competence~~	**Motivation**
24.2	20.7	~~Access~~	**Competence**	**Motivation**
35.3	37.9	**Access**	**Competence**	**Motivation**
100	100			

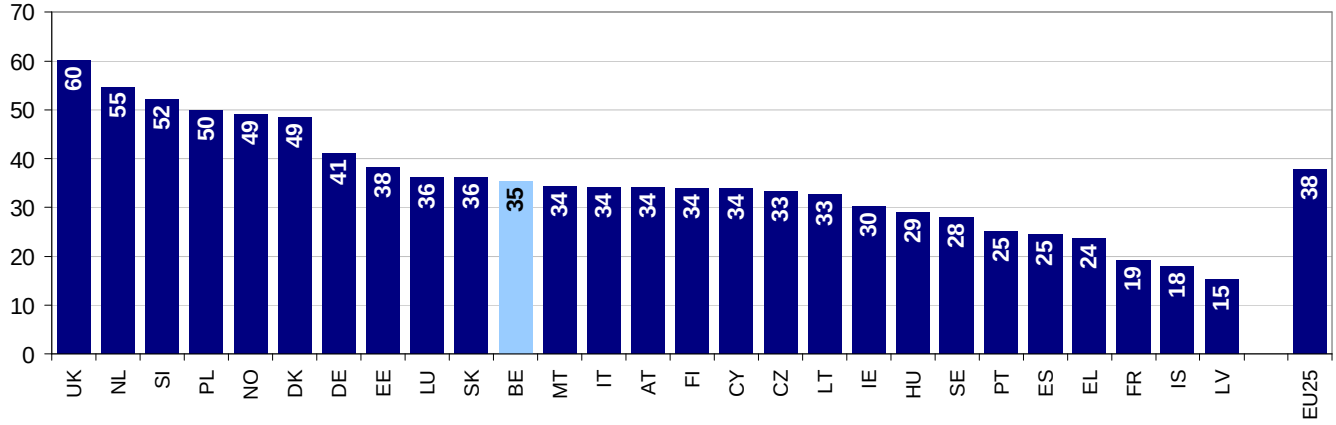
Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [7]

38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With 35% of the teachers belonging to this group, Belgium ranks at 15th which places the country in the bottom half of European countries. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet still insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school key barriers. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

The situation in Belgium is very similar to the overall situation in the EU25 with figures very close to the European ones.

ICT Readiness of Teachers in Belgium: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [8] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[9]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than the official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools, which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person who was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher would randomly select a teacher who would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 European countries. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

With a GDP per capita of 27,576 US$, Belgium belongs to the wealthier Member States. A considerable amount of public expenditure is spent on education, and the pupil/teacher ratio runs remarkably low. As one of the smaller countries in the EU, Belgium has the lowest rate of rural population.

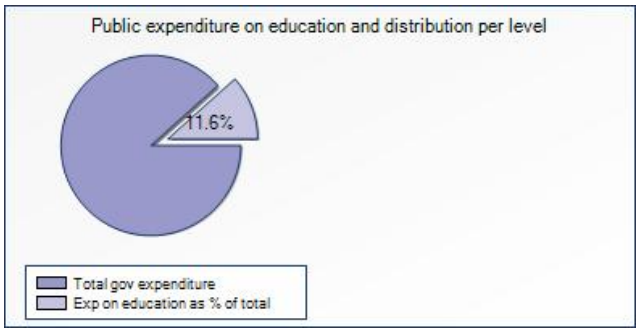
General Population Data for Belgium 2002/03[10]

Total population (000)	10,296
Annual population growth rate (%)*	0.4
Population 0-14 years (%)	17
Rural population (%)*	3
Total fertility rate (births per woman) *	1.6
Infant mortality rate (0/00) *	5
Life expectancy at birth (years) *	78
GDP per capita (PPP) US$ *	27,576
GDP growth rate (%)*	0.7
* World Bank World Development Indicators	

Resources for Education in Belgium 2002/03

Pupil / teacher ratio (primary)	12
Public expenditure on education :	
as % of GDP	6.3
as % of total government expenditure	11.6
Distribution of public expenditure per level (%):	
pre-primary	…
Primary	…
Secondary	…
tertiary	…
unknown	…

Resources for Education in Belgium 2002/03



The Educational System in Belgium[11]

The Flemish Community

In 1998/1999, 35.4% of the population were aged under 29, and 923, 488 pupils were of compulsory education age. The language of instruction is Dutch.

In 1996/97, 30% of pupils in primary and secondary education were in state schools (attached to the Flemish Community, the provinces or communes), while 70% attended grant-aided private schools that received their subsidies from the Community.

The federal government awards financial resources to the Flemish Community for education. The Community parliament exercises legislative powers, and the Community government exercises executive power as regards the organization and administration of education. Private schools may be founded independently of the public authorities, but must comply with Community decrees if they are to award recognized qualifications and get Community subsidies. Different administrative authorities are responsible for running the various categories of school. In schools responsible to the Flemish Community, these authorities are a central board (*Raad van het Gemeenschapsonderwijs*) and local boards. The communes or the provinces are themselves the administrative authorities for all state schools under their jurisdiction, whereas private schools subsidized by the Community are run by separate authorities.

The Community inspectorate is regarded as an instrument enabling the Community to supervise respect for obligations incumbent on the administrative authorities, particularly as regards quality and aims. It exercises oversight of the entire system except higher education. State officials who conduct inspections are responsible for the control of financial management and for conditions governing funding.

The French Community

On January 1, 2003, 34.91% of the population belonged to the 2-29 age-group. In 2003/04, 996, 179 pupils and students were enrolled in full-time education. The language of instruction is French.

In 2002/03, 48.8% of pupils in primary and normal secondary education attended a public-sector school (governed by the French Community itself, or one of its provinces or municipalities), while 51.2% attended a grant-aided private school, which received the major part of its financial allocation from the Community.

The financing of the Communities is essentially ensured by allocations from personal income taxes, value added tax (VAT) and radio-television licence fees (which have now been suppressed and replaced by an equivalent subsidy from the federal power). Communities can also, within certain limits, raise loans.

The Government of the French Community is the top-level authority for education in the Community (and, in this capacity, establishes its structure, curricula and methods, and manages its schools), laying down regulations for the schools that it subsidises, in accordance with constitutional and legal provisions. The Community subsidises schools governed by other public authorities (the provinces and municipalities), or private persons (schools governed by a private person constitute what is known as the "independent education system"). For entitlement to a subsidy, schools are expected to comply with regulations relating to their curricular organisation, structure, the adoption of common reference systems 1, security and health standards, etc.

The private sector in its strictest sense, which comprises schools that receive no subsidy from the French Community, but which may be recognised by it, is very small. The Community inspectorate for schools ensures that the administrative authorities responsible for them fulfill their obligations and, in particular, make appropriate use of the public resources they receive. It oversees the entire system, with the exception of higher education institutions offering more than a single stage of studies. Moreover, an audit service verifies the correct utilisation of subsidies paid by the Community to basic and secondary education schools and that they maintain correct accounting records. As far as the universities and the Hautes Ecoles (non-university tertiary education institutes) are concerned, they are subject to the broad oversight of French Community government commissioners and an inspector of finance who ensure compliance with financial laws and regulations.

The German Community

On January 1st, 2003, 34.85% of the population (71,571) were aged under 29 and 11,905 pupils were of compulsory education age. These figures are of no real statistical value because of the border situation (with 13.92% of enrolled pupils in mainstream education coming from outside the Community – mainly from the French-speaking part of Belgium (10.87%), from Luxembourg (1.2%) and from Germany (1.73%) – and many pupils domiciled in the German-speaking Community but enrolled in schools in the French Community and in Germany). The language of instruction is German (in a few primary schools French is used as the language of the linguistic minority).

In 2003/04, 70% of pupils in primary and secondary education attended public-sector schools (run by the Community itself or by a municipality), while 30% attended grant-aided private catholic schools, which receive the major allocation of their financial support from the German-speaking Community budget.

The Parliament and the Government of the German-speaking Community are the top-level authorities for education in the Community. They respectively have legislative power and executive authority as regards the management and administration of education in general. Private-sector schools may be founded independently of the public authorities; they must comply with Community decrees relating to the award of recognized qualifications and the receipt of Community subsidies. Different Organizing Authorities are responsible for the management and administration of the various kinds of school. In the case of "Community schools" ("GUW"), this authority is the Community itself, represented by the minister of education himself. The municipalities are similarly responsible for the schools they run themselves, while a different authority – a person or a group of persons - is responsible for private sector schools which receive a Community subsidy.

One purpose of the Community inspectorate is to enable the Community to ensure respect for the administrative duties incumbent on school Organizing Authorities and, in particular, the correct use of the Community resources available to them. The inspectorate acts across the entire system. University education and other forms of higher education of long duration are not provided in the German-speaking Community of Belgium.

The use of ICT in Education[12]

Since July 2000, a coherent and comprehensive action programme *Lifelong learning on the right tracks* has been implemented. Meanwhile, a new Flemish Government was installed in July 2004, resulting in new policy papers dealing with LLL in general and with more specific issues of education and training.

An even closer co-operation between the different departments is being sought for education and training in the policy fields of education, work and economy, which now resorts under the authority of one Minister and a new interdepartmental structure concerning lifelong learning (LLL) is being developed. The DIVA (Training and Alignment Information Service) will take care of the alignment tasks at operational level. At the same time, the government is trying to reach new potential learners.

The action programme involves all ages and life spheres: action points on compulsory education, on training during working life, on integration of ICT, on social-cultural work, etc. The new Flemish Government stresses the following aspects of LLL in view of exploiting every one's talents in the best possible way: stimulating the participation in LLL, developing partnerships in the field of education and training, connecting education and the labour market, developing a performing training market, ensuring equal education and training opportunities, developing a structural career guidance and the validation of prior learning. The existing action programme on LLL will be revised in due time following the new guiding principles.

The Study

There is a lack of information on the actual use of ICT for learning in schools and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway.

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

A final report has also been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

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1 It has to be noted that teachers however in most cases have more than one subject and may use computers only in one subject. This has not been surveyed

2 For Belgium, no separate breakdowns of the HTS data according to Intermediate regions and thinly populated regions are reported due to insufficient numbers of observations.

3 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

4 This section includes some comparisons of the Eurobarometer Flash 94/1001 and 95/102 results from 2001 with those from the LearnInd surveys from 2006. Please bear in mind that the figures are not directly comparable due to the use of slightly different approaches and methodologies.

5 Base (100%) = all teachers who have used a computer in class in the last 12 months.

6 Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

7 Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

8 http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

9 Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

10 Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

11 Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

12 Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)